

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 29

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROBERT M. PORTER and MICHAEL L. MUELLER

Appeal No. 1996-3126
Application No. 08/300,586¹

HEARD: January 10, 2000

Before THOMAS, RUGGIERO, and GROSS, Administrative Patent Judges.

GROSS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 2, 3, 5, 8 through 10, 12, 21 through 23, 25, 28, 30, 32, 35, 38, and 52 through 55. Claims 1, 4, 6, 7,

¹ Application for patent filed September 2, 1994. According to appellants, this application is a continuation of Application No. 08/098,356, filed July 30, 1993, now abandoned; which is a National stage application under 35 U.S.C. § 371 of PCT/US92/00844, filed January 30, 1992.

11, 13 through 20, 24, 26, 27, 29, 31, 33, 34, 36, 37, and 39 through 51 have been canceled. In addition, in a Reply Brief, filed

June 17, 1996, appellants canceled claims 8 through 10, 12, 28, 30, and 32. Accordingly, claims 2, 3, 5, 21 through 23, 25, 35, 38, and 52 through 55 remain before us on appeal.

Appellants' invention relates to a high power radio frequency power amplifier. The response voltage waveform of the amplifier includes a substantial voltage at the end of the response period. Claim 53 is illustrative of the claimed invention, and it reads as follows:

53. A high power, switch mode radio frequency power amplifier to provide power to a load comprising:

- a. a radio frequency driver;
- b. a means for switching responsive to said driver wherein said means for switching operates rapidly and is capable of alternately establishing a conductive state for a conductive time period and a non-conductive state for a response time period;
- c. a means for providing a supply voltage to said switch;
- d. a means for conditioning responsive to said supply voltage wherein said means for conditioning acts to create a response voltage waveform wherein said response waveform has a time-varying voltage during said response time period and wherein said response voltage waveform has substantial voltage at the end of said response time period.

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The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Sokal et al. (Sokal)	3,919,656	Nov. 11, 1975
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Herbert L. Krauss et al., Solid State Radio Engineering 394-412 and 448-454 (John Wiley & Sons, Inc. 1980)(Krauss)

Claims 2, 3, 5, 21 through 23, 25, 35, 38, and 52 through 55 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Sokal or Krauss.

Reference is made to the Final Rejection (Paper No. 14, mailed June 28, 1995) and the Examiner's Answer (Paper No. 18, mailed April 11, 1996) for the examiner's complete reasoning in support of the rejections, and to appellants' Brief (Paper No. 17, filed February 26, 1996) and Reply Brief (Paper No. 24, filed June 17, 1996) for appellants' arguments thereagainst.

OPINION

As a preliminary matter we note that appellants indicate on page 3 of the Brief, and page 7 of the Reply Brief, that the claims do not stand or fall together. Appellants propose seven groups and provide arguments in accordance with 37 CFR

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§ 1.192(c)(7) as to the separate patentability of each, except for claims 53 and 21. Since appellants' sole argument for claims 53 and 21 refers to the arguments for claim 52, we will consider claims 21, 52, and 53 together. Thus, we will treat the claims according to the following six groups: (1) claims 21, 52, and 53, (2) claims 2 and 22, (3) claims 3 and 23, (4) claims 5 and 25, (5) claims 35 and 54, and (6) claims 38 and 55, with claims 52, 2, 3, 5, 54, and 55, respectively, as representative.

We have carefully considered the claims, the applied prior art references, and the respective positions articulated by appellants and the examiner. As a consequence of our review, we will affirm the anticipation rejection of claims 21, 52, and 53 and reverse the anticipation rejections of 2, 3, 5, 22, 23, 25, 35, 38, 54, and 55.

Appellants contend (Brief, pages 5-6) that Sokal's disclosure teaches away from the claimed invention, and therefore cannot anticipate the claims. Appellants refer to the affidavit of Mr. Nathan O. Sokal (one of the inventors of the Sokal patent), filed May 18, 1996, as support for their position. We agree that Sokal's invention is contrary to

appellants' claims. In particular, Sokal specifies in column 16 that V_{CE} falls to approximately zero as the switch turns on and that the waveform for V_{CE} has a slope of zero at that point. Further, Figure 4A shows the voltage slightly above zero when the switch turns on. In other words, Sokal teaches that the preferred voltage is small, not substantial when the switch turns on.

However, Figure 4A also shows an undesirable condition of Q_L TOO LOW, wherein there is a substantial voltage which abruptly drops to zero when the switch is turned on. Although the undesirability of such condition would appear to teach away further, according to Celeritas Techs., Ltd. v. Rockwell Int'l Corp., 150 F.3d 1354, 1361, 47 USPQ2d 1516, 1522 (Fed. Cir. 1998),

[a] reference is no less anticipatory if, after disclosing the invention, the reference then disparages it. Thus, the question whether a reference "teaches away" from the invention is inapplicable to an anticipation analysis. See Kalman v. Kimberly-Clark Corp., 713 F.2d 760, 772, 218 USPQ 781, 789 (Fed. Cir. 1983) ("The law of anticipation does not require that the reference 'teach' what the subject matter of the patent teaches [I]t is only necessary that the claims under attack, as construed by the court, 'read on' something disclosed in the reference."), overruled in part on other grounds, SRI Int'l v. Matsushita

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Elec. Corp. of Am., 775 F.2d 1107, 1125, 227 USPQ
577, 588 (Fed. Cir. 1985)(in banc).

Therefore, the upper curve in Figure 4A anticipates claims 52 and 53, notwithstanding the disclosure to avoid such a condition. Accordingly, we will sustain the rejection over Sokal of claims 52, 53, and 21 (which is grouped with 53.)

Krauss shows in Figure 14-8 a voltage curve similar to that of Sokal and labels it "Suboptimum." The curve shows a substantial voltage at the turn-on point of the switch. Like Sokal, Krauss describes the optimum condition as having a zero voltage when the switch is turned on. Accordingly, appellants argue that Krauss teaches away from the claimed invention. Nonetheless, like Sokal, Krauss discloses the claimed invention in the "Suboptimum" curve and therefore anticipates claims 52 and 53. Consequently, we will sustain the rejection over Krauss of claims 52, 53, and 21 (which is grouped with 53).

We note that appellants include additional arguments worth addressing as to claims 52, 53, and their dependents. Appellants state (Brief, page 5) that "Picking and Choosing Is Not Allowed in a 102 Rejection." We find no "picking and

choosing" in the examiner's rejection. For each reference, the examiner has used a single figure and the description thereof. Appellants continue (Brief, page 5) that the examiner "pick[ed] through the reference . . . without any deference to what the reference truly teaches." This merely restates the argument that the references teach away from the claimed invention, with which we have dealt supra. Appellants also contend that the references are not enabling, primarily relying on the affidavit of Mr. Nathan O. Sokal.

Mr. Sokal states (Affidavit, page 2) that both references "show that the circuit can operate in a mode having voltage across the switch at turn-on time and they tell what circuit conditions cause this operating mode" (underlining added for emphasis). Thus, according to Mr. Sokal, the references disclose the specific conditions to obtain the claimed operating mode, thereby providing enablement. Mr. Sokal goes on to say that the references do not suggest using such an operating mode, but that again pertains to teaching away, not to enablement. Accordingly, we are not persuaded by the additional arguments.

As to claims 2 and 22, the examiner contends (Final Rejection, page 3) that the switches in the references have pn junctions, which are known to have varactor capacitance associated therewith. In the Examiner's Answer (page 7), the examiner explains that transistors have interelectrode capacitance and thus concludes that the limitation of varactor capacitance is met. In other words, the examiner appears to equate varactor capacitance with interelectrode capacitance. We agree with appellants (Brief, page 7) that it is not true that the disclosed switches inherently have varactor capacitance, and the examiner has provided no evidence to persuade us otherwise. Further, Sokal gives no indication that the transistor capacitance is a varactor capacitance. Therefore, we must reverse the rejection of claims 2 and 22 over Sokal.

Krauss states on page 450 that "capacitance C is independent of voltage (i.e., there are no varactor effects)," where C equals the capacitance C_1 inherent in the transistor and capacitance C_2 added to improve the amplifier (see page 448). In other words, Krauss does not include a varactor capacitor, and therefore cannot anticipate claims 2 and 22.

Accordingly, we cannot sustain the rejection of claims 2 and 22 over Krauss.

As explained above, neither Sokal nor Krauss has a varactor capacitance. Therefore, Sokal and Krauss clearly do not include a substantial varactor capacitance as recited in claims 3 and 23. Accordingly, we cannot sustain the anticipation rejection of claims 3 and 23 over Sokal nor Krauss.

Claims 5 and 25 recite a voltage immediately prior to the switch's turning on equal to about 50% of the supply voltage. Sokal shows in Figure 4A a peak voltage of $3.47 V_{cc} - 2.47 V_{CE}$. A graphical calculation of V_{cc} shows that the voltage step just before turn-on of the switch is approximately 50% of the supply voltage V_{cc} . Similarly, Figure 14-8 of Krauss would appear to have a voltage at turn-on of the switch at about 50% of the supply voltage. However, neither reference indicates what type of scale is used for the vertical axis of the graph. As appellants assert (Reply Brief, page 6) that "[i]t is not uncommon for voltage and current waveforms to be plotted on semi-log graphs rather than on a linear-linear scale," we find that the value of the voltage step relative to the supply

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voltage is indeterminable. Accordingly, we must reverse the rejection of claims 5 and 25.

For claim 54, the examiner's sole explanation (Final Rejection, page 4, and Answer, page 6) is that the voltage waveforms of both Sokal and Krauss show that the maximum switch voltage can be reduced during the response time period. The examiner concludes that the means for reducing the voltage is inherent to the circuit. The examiner, however, has ignored the limitation that such reduction must occur "while maintaining said level of power to said load." Further, the examiner has failed to identify in the references appellants' disclosed means for accomplishing such reduction of the maximum switch voltage, in accordance with In re Donaldson Co., 16 F.3d 1189, 29 USPQ2d 1845 (Fed. Cir. 1994). "It is axiomatic that anticipation of a claim under § 102 can be found only if the prior art reference discloses every element of the claim." In re King, 801 F.2d 1324, 1326, 231 USPQ 136, 138 (Fed. Cir. 1986). See also Lindemann Maschinenfabrik v. American Hoist and Derrick, 730 F.2d 1452, 1458, 221 USPQ 481, 485 (Fed. Cir. 1984). Since neither Sokal nor Krauss discloses the claimed means, we cannot sustain the

anticipation rejection of claim 54 and its dependent, claim 35.

Similarly, for claim 55, the examiner merely states (Final Rejection, page 4, and Answer, page 6) that the voltage waveforms of both Sokal and Krauss have a maximum voltage during the response time period. Again the examiner concludes that the claimed means (a means for increasing the power) is inherent to the circuit. The examiner, however, has ignored the limitation that the maximum switch voltage must remain constant while the power level increases. Further, the examiner has failed to identify in the references appellants' disclosed means for accomplishing such an increase of the power, in accordance with Donaldson. Since neither Sokal nor Krauss discloses the claimed means, we cannot sustain the anticipation rejection of claim 54 and its dependent, claim 35.

CONCLUSION

The decision of the examiner rejecting claims 2, 3, 5, 21 through 23, 25, 35, 38, and 52 through 55 under 35 U.S.C.

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§ 102(b) is affirmed as to claims 21, 52, and 53 and reversed
as to claims 2, 3, 5, 22, 23, 25, 35, 38, 54, and 55.

Therefore, the examiner's decision is affirmed-in-part.

No time period for taking any subsequent action in
connection with this appeal may be extended under 37 CFR
§ 1.136(a).

AFFIRMED-IN-PART

JAMES D. THOMAS)	
Administrative Patent Judge)	
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)	
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)	BOARD OF PATENT
JOSEPH F. RUGGIERO)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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